

Assessing Roadside Vegetation Management Alternatives  
Project Management Meeting  
January 20, 2005

**January Action Items**

Item #	Action	Due Date
1.	Jacob & Rich will put together a list of what materials they would like to see from other states and send to Ray.	ASAP
2.	Kristina will bring the 1 <sup>st</sup> cut of the Literature Review	February 17
3.	Next meeting – <b>in Conference room 2A</b>	<b>February 17</b>

Present:      Dave McCormick              Keith Anderson  
                 Bob Berger                      Jack Taylor  
                 John Andrews                  Jacob Millard  
                 Jay Davis                              Ray Willard  
                 Roy Scalf                              Pat Moylan  
                 Rich Horner                        Lee Dorigan  
                 Mark Wahl (by phone)

Absent:        Heather Hansen              Josey Paul  
                 Karl Arne                      Angela Storey  
                 Stan Suchan                 Kristina Hill

News Items: Dave passed around two articles – the first was WSDOT's news release on herbicide use for 2004. The second was in the Whidbey Island News, also on herbicide use. Over the last season, there was a 60% reduction of herbicide use by WSDOT.

-Dave talked about the TRB Conference he attended in Washington D.C. He went to numerous seminars and workshops on Roadside Maintenance and invasive species. He commented on how our project is getting nationwide attention.

-Agenda: one change – Jacob and Rich will be covering Kristina's material on the Draft Decision Framework and the findings from the phone interviews.

-December minutes – Pat reviewed the minutes from the December meeting and asked if there were any comments or changes. Mark asked if the VE Study final report was out yet. Ray said it's still being edited and will be out soon. He will let everyone know when it is ready. Pat went through some of the points that came out of the study:

- establishing grass stands to the edge of the roadway.
- place permeable mats under guardrails
- using more aggressive weed control during construction.
- delineated native vegetation within the project zones.

-cost items and how they effect cost with each project.

Dave told Mark that he did get his comments on the Troxell site and will respond.

Ray said that the herbicide use numbers are all in and they have started analyzing them area by area.

-Update on Status of Roadside VE Study recommendations: there will be four contracts upcoming on Whidbey Island. The next step will be to look at the study on a Statewide basis. Design and Maintenance will be working together on this. Dave suggested that Island and Snohomish counties may be interested in getting involved and commenting on it and that this may be something they might want to share with their designers. This will be published over the next six months.

Overview of WSDOT experience & practices: Ray gave a powerpoint presentation on some of the primary problems that WSDOT has dealt with:

1) Surface drainage and water quality – sub-surface drainage issues doesn't seem to be a concern to the pavement engineers. It could be because WSDOT has more paved shoulders compared to county roads where there is more traffic near the pavement edge. A relationship of maintaining pavement edge and keeping good water quality is needed.

2) Pavement breakup – there are different species that grow up through the pavement. This can add extra cost in pavement work. There are other conditions like weather and type and depth of pavement material that contributes too. This should be added to the Decision Framework.

3) Weed Control – Ray talked about some of the species that we've been working with and even a new one called hairy willow herb. The weed control boards are still just watching it for now, but some feel it could become a large regional problem like purple loosestrife. Horseweed is another hard one to control. It's a native plant in Eastern WA and not as aggressive there. It's classified as a nuisance weed. Other hard to control species mentioned were Japanese knotweed, Meadow knapweed, and Canadian thistle.

4) Guardrail Maintenance

5) Fire Starts

6) Alternatives – Some of the methods and materials that WSDOT has been or will be trying are:

a) WeedEnder – felt mat

b) Turbo-scape –made from recycled tires with adhesive. They're trying it down in Vancouver. It can be both impervious and pervious. They're trying both ways. Cost is comparable.

c) Tilling with Tigerclaw – appears to be working well in Everett on I-5 and SR2. Used in areas with wider shoulders and on limited access highways.

d) Blow compost over existing and spray the weeds with herbicide for initial control. Then plant a low growing grass.

e) Compost strip – Place compost instead of crushed rock for the final layer in unpaved shoulder construction. The mixture that is being developed as a recommendation of the VE Study is the same mix that is being used on Whidbey Island. Low growing native mix. Steve Erickson has approved the

mix. Dave asked Mark if WINS agrees and Mark said he will check back and will let Dave know if there are still issues with it.

- f) No Zone 1 maintenance with mowing – Ray talked about the area on Hwy 2 that has been maintained with no Zone 1 for the past 6 years. They mow once or twice a year and have had little to no buildup of sediment at the pavement edge. The reason for lack of buildup is not known for sure, as other highways with the same historic maintenance practices (such as SR305 on Bainbridge Island) have seen significant buildup. It is possible that it could be a result of snowplow operation or sweeping routines.

-Interviews: Rich said that he had given Jacob a series of questions to help with the Decision package. Jacob gave a brief summary of some of his findings: There were 44 interviews. These included interviews with WSDOT, CALTRANS, UC Davis, FHWA, the National Park Service, various state DOTs and private sector companies. States like Utah, Idaho and Montana are using native vegetation along the roadside without spraying. The New York landscape architect at Suni College/Cornell U said they use low growing plants directly under the guardrail (allelopathic species). Oregon is letting plants grow to the edge of the pavement. They also have been looking at low growing moss. CALTRANS, Maine and Massachusetts pave directly under the guardrail. Regarding ponding and subgrade problems, there weren't very many states that have a problem like we do. A lot of people felt that ponding is more a road design issue rather than a maintenance issue. New York allows flooding of the 1<sup>st</sup> travel lane. They also have drains along their curbing on some roadways.

Jacob said the interviewing process is complete but the culling of the information isn't. The next step is to do the same for the literature review. They got more information on what alternatives are being used than anything. They have about 30-40 alternatives. Dave asked if Jacob could put the list of interviewees on the website. Ray said he's still trying to get Lane County to come and give a presentation of their practices. A discussion then began regarding the term "alternative". There seemed to be a confusion of what is meant in regards to the definition. Ray said anything that is not conventional Zone 1 is an alternative.

Literature Review: Rich introduced Makei Suzuki who is a graduate student with GIS expertise and will be helping on the project when it gets closer to the end. Rich said there are 2 sources: formal and informal (talking to other people) and an overlap of the two. There are roughly 100 items in each group and roughly half of each group in hand. He requested assistance in gathering more information from agencies from other states. Dave suggested getting a list together and what information they would like and then get it to Ray who will find someone to help out. Rich also asked if Dave could get him the agenda from the TRB conference. The first cut of the literature review still needs to be done and should be ready by next month's meeting.

Draft Decision Framework: Rich gave a slide presentation on the handout.

#### 1) Definitions

- Pavement Edge Zone – strip that may or may not have vegetation. Need more elaboration on definition.
- Conventional Zone 1 maintenance – pre-emergent and non selective herbicides applied annually.
- Vegetation control – not looking for bare ground. Vegetation elimination is kept together with Zone 1 maintenance.
- Environmental sensitivity – There was a discussion on the words used because people's perception of the term differs. Rich said it is a subjective phrase. Dave suggested that instead of saying "related high environmental sensitivity", maybe it should say "potentially elevated risk".
- Drainage-related decision factors – Includes primarily surface water issues that Ray talked about it in his presentation. Only refers to the effects to the pavement. Doesn't include structures like guardrail.

Decision Framework (page 3 of handout): Rich went through the different modules.

- 1) Decision Factor Module – this is to determine if maintenance of a Zone 1 is required.
- 2) Alternatives Assessment Module – Ray asked if we are looking for alternatives to conventional Zone 1 maintenance or are we looking at conventional Zone 1 maintenance as one of the set of alternatives? He felt it would be equal to the other alternatives in relation to being cost effective.
- 3) Environmental Sensitivity Analysis Module

Flow Chart (page 4 of handout): Rich took the group through the steps of the flow chart. Basically, if you work through the 9 things and the answer is no, that's the end. If the answer is yes, you move on to the next module.

Rich said cost does not come up on a road segment scale but more a general policy matter that the department decides to maintain all roadsides with given type and with a class of decision factors in a particular way. Dave suggested putting the test for cost effectiveness higher in the flow chart.

Conditions for the Environmental Sensitivity – The only criteria we have are for water (60 ft for certain herbicides). Ray said we already have departmental policies in place. What we need to look at is local conditions policy more than a general statewide blanket policy. Maybe what should be put in is, "is there a feasible or practical alternative available?" Jay Davis questioned the apparent redundancy that will occur with the module. How often do you revisit that? On a yearly basis? Dave said there's a cost effectiveness piece that's in there too, not just the environmental issues but also the long term maintenance costs. Ray felt that the use of herbicide should be considered as an option. Rich said he will add that to the chart and if selected, it gets future consideration. Another suggestion was to add "Measures of Effectiveness" to the chart. Discussion began about where the Environmental Sensitivity module should be placed in the cycle.

Drainage-Related Decision Factor (page 5 of handout): If there's even a minimal percentage of a slope (2-3%) you could be pretty sure to get water off the pavement.

Maybe that's something Jacob should go back and revisit with some of the interviewees. The question that Jacob could ask is, "how much of a drop in the pavement do you have in order to have good drainage?" More slope in the shoulder helps. Dave said that WSDOT designs with more than 2-3% slope. He suggested that take a look at the State Design Manual and AASHTO Design Manual. Ray said that slope is one thing, but maintaining the edge is another. It would be nice to know if there are a set of variables that contributes to that locally. There seems to be conflicting information from our guys in the field and from the counties. Rich asked if he was to say, travel lane is a minimum distance of "x" from the pavement edge, what is "x"? Ray suggested in addition to the working group on this, but also asking the technical advisory group for their knowledge and experience to these particular aspects.

Points and Observations:

- 1) Immediate Purpose – to simulate the results of our work here. It's still needing more research, but basically ready to use. Some may be dropped completely and should be decided by the smaller group.
- 2) Anticipated purpose – operation decision making tools. There are too many gaps to put down on paper yet, and that's why we should add as much as possible and worry about streamlining later.
- 3) Primarily for existing highways. The Value Engineering process will take care of these conditions through design on new roads.
- 4) Scale is mid-range scale
- 5) Issue of cost effectiveness
- 6) Time for implementation – issues of timing and transition should be subjects of discussion for this committee and the technical committee. Trying to effectively establish desirable vegetation in a former Zone 1 area is another huge issue for WSDOT.

Next meeting will be on Thursday, February 17 at 11:30 am in Conference room 2A.